

APPENDIX B CHECKLIST TABLES

Table B-1. SOW Preparation Checklist

Project Name:	
Project Location:	
MM DC Representative	
Preparer's Name and Title:	
Date of Preparation:	

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>All SOWs</u>			
1. Has the authorization and funding been received for SOW preparation?	<u> </u>	<u> </u>	<u> </u>
2. Has the MM-DC DC held pre-scoping meeting with PDT to discuss project requirements and to determine required resources?	<u> </u>	<u> </u>	<u> </u>
3. Have project requirements been identified through interfacing with the PM?	<u> </u>	<u> </u>	<u> </u>
4. Do the personnel responsible for preparing the SOW have a detailed knowledge of the project history, site conditions, and characteristics of MEC and MC anticipated and of geophysical methods?	<u> </u>	<u> </u>	<u> </u>
5. Has existing site information been provided to the PDT (may include ASR, previous site investigation reports, information from site visits, information from district contractors that have worked on the site in the past, etc.)?	<u> </u>	<u> </u>	<u> </u>
6. Have the requirements for the site visit been met (i.e., right of entry, ASSHP, etc. - see Chapter 3 of this manual)?	<u> </u>	<u> </u>	<u> </u>
7. Have Federal, state and local regulatory requirements been identified in the SOW?	<u> </u>	<u> </u>	<u> </u>
8. Has an appropriate schedule been included in the SOW?	<u> </u>	<u> </u>	<u> </u>

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	<u>Y</u>	<u>N</u>	<u>N/A</u>
9. Has the MM CX reviewed the SOW when required by ER 1110-1-8153?	_____	_____	_____
10. Are the following general topics included in the SOW:			
• General responsibilities of the contractor?	_____	_____	_____
• Project description?	_____	_____	_____
• Scope of services?	_____	_____	_____
• Schedule and deliverables?	_____	_____	_____
• Reviews and conferences?	_____	_____	_____
• Technical criteria and standards, including government furnished information?	_____	_____	_____
• Administrative instructions?	_____	_____	_____
• General provisions?	_____	_____	_____
• References?	_____	_____	_____
11. Have review comments been obtained from appropriate personnel, including PM and PDT members, IAW ER 1110-1-8153?	_____	_____	_____
12. Has the SOW been approved IAW ER 1110-1-8153 and has the final SOW been submitted to the CO?	_____	_____	_____
13. Has an external review of the SOW been performed?	_____	_____	_____
14. If the SOW is prepared for a removal action, did it clearly identify if the contractor is responsible for the preparation of an ESS?	_____	_____	_____
<u>SOW for RI/FS</u>			
1. Have the following typical tasks, as applicable, been included in the RI/FS SOW:	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Records review and land restriction assessment?	_____	_____	_____
• Project Work Plan including SSHP (see Chapter 3 of this manual)?	_____	_____	_____
• Site preparation?	_____	_____	_____
• Site characterization (see Chapters 5 and 6 of this manual)?	_____	_____	_____
• Environmental Sampling?	_____	_____	_____
• Customer's safety and public risk assessment (see Chapter 9 of this manual)?	_____	_____	_____
• Preparation of the RI/FS report?	_____	_____	_____
• Preparation of the Action Memorandum/Record of Decision?	_____	_____	_____
• Community relations?	_____	_____	_____
• Maintain Administrative Record?	_____	_____	_____
• TPP?	_____	_____	_____
• Scheduling?	_____	_____	_____
2. Is the SOW in compliance with the Approval Memorandum?	_____	_____	_____
• Site visit (see Chapter 3 of this manual)?	_____	_____	_____
• Work Plan development (see Chapter 4 of this manual)?	_____	_____	_____
• Location surveying and mapping (see Chapters 5 and 8 of this manual)?	_____	_____	_____
• Site preparation (see Chapter 6 of this manual)?	_____	_____	_____
• Geophysical investigation prove-out (see Chapter 6 of this manual)?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Geophysical investigation (see Chapter 6 of this manual)?	_____	_____	_____
• Anomaly reacquisition (see Chapter 6 of this manual)?	_____	_____	_____
• Remedial action?	_____	_____	_____
• LUC activities and recurring reviews?	_____	_____	_____
• Scrap turn-in?	_____	_____	_____
<u>SOW for EE/CA</u>	_____	_____	_____
1. Have the following typical tasks, as applicable, been included in the EE/CA SOW:	_____	_____	_____
• Records review and land restriction assessment?	_____	_____	_____
• Project Work Plan including SSHP and Institutional Analysis Plan (see Chapter 3 of this manual)?	_____	_____	_____
• Site preparation?	_____	_____	_____
• Site characterization (see Chapters 5 and 6 of this manual)?	_____	_____	_____
• Environmental Sampling?	_____	_____	_____
• Customer's safety and public risk evaluation (see Chapter 9 of this manual)?	_____	_____	_____
• Preparation of the EE/CA report?	_____	_____	_____
• Preparation of the Action Memorandum/Decision Document?	_____	_____	_____
• Community relations?	_____	_____	_____
• Maintain Administrative Record?	_____	_____	_____
• TPP?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Scheduling?	_____	_____	_____
2. Is the SOW in compliance with the Approval Memorandum?	_____	_____	_____
• Site visit (see Chapter 3 of this manual)?	_____	_____	_____
• Work Plan development (see Chapter 4 of this manual)?	_____	_____	_____
• Location surveying and mapping (see Chapters 5 and 8 of this manual)?	_____	_____	_____
• Site preparation (see Chapter 6 of this manual)?	_____	_____	_____
• Geophysical investigation prove-out (see Chapter 6 of this manual)?	_____	_____	_____
• Geophysical investigation (see Chapter 6 of this manual)?	_____	_____	_____
• Anomaly reacquisition (see Chapter 6 of this manual)?	_____	_____	_____
• Removal action?	_____	_____	_____
• LUC activities and recurring reviews?	_____	_____	_____
• Scrap turn-in?	_____	_____	_____
• Preparation of site-specific removal report?	_____	_____	_____
• Is the SOW in compliance with the Action Memorandum?	_____	_____	_____
• Site visit (see Chapter 3 of this manual)?	_____	_____	_____
• Work Plan development (see Chapter 4 of this manual)?	_____	_____	_____
• Location surveying and mapping (see Chapters 5 and 8 of this manual)?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Site preparation (see Chapter 6 of this manual)?	_____	_____	_____
• Geophysical investigation prove-out (see Chapter 6 of this manual)?	_____	_____	_____
• Geophysical investigation (see Chapter 6 of this manual)?	_____	_____	_____
• Anomaly reacquisition (see Chapter 6 of this manual)?	_____	_____	_____
• Removal action?	_____	_____	_____
• LUC activities and recurring reviews?	_____	_____	_____
• Scrap turn-in?	_____	_____	_____
• Preparation of site-specific removal report?	_____	_____	_____
3. Is the SOW in compliance with the Action Memorandum?	_____	_____	_____
SOW for GDS			
1. Has the GDS task in the SOW been prepared by PDT personnel with a detailed knowledge of project history, site conditions, site-specific data requirements and location survey and mapping methodologies?	_____	_____	_____
2. Does the SOW specify the GDS to be used on the project:	_____	_____	_____
• Were the systems currently utilized by the MM CX , MM DC, district, project sponsor and stakeholders considered in choosing the project GDS?	_____	_____	_____
• Will the chosen system avoid production of geospatial data in multiple formats for distribution or use?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<ul style="list-style-type: none"> Will the chosen system accomplish the current mission but also allow for future reuse or use of the geospatial data by others without translation? 			
3. Does the SOW specify the spatial coordinate reference system to be used?			
4. Is the chosen spatial coordinate reference system compatible with the existing district or project sponsor GDS activities?			
5. Does the SOW state that all GDS activities should be managed by a qualified GIS manager with a minimum of 3 years direct experience managing geospatial data systems within the system environment to be used for the project (e.g., ArcInfo, ArcView, or Microstation MGE)?			
6. Does the SOW state that all surveying and mapping activities must be conducted under the responsible charge of a Registered or Professional Land Surveyor registered and/or licensed in the state in which the work will be conducted?			
7. Does the SOW state that the Field Surveyor assigned to the project must have a minimum of 5 years experience as a Survey Party Chief?			
8. Does the SOW require that a qualified UXO Technician II accompany the Field Surveyor at all times, unless it is decided by the UXO Technician II and the OE Safety Specialist that the UXO Technician II is not required?			
9. Does the SOW state that the contractor must follow the safety requirements in EM 385-1-1?			
10. Does the SOW specify the requirements for control point establishment?			

	<u>Y</u>	<u>N</u>	<u>N/A</u>
11. Does the SOW state the specifications for monument caps and monument identification?	_____	_____	_____
12. Does the SOW give procedures for plotting the control points?	_____	_____	_____
13. Does the SOW give requirements for grid corner establishment?	_____	_____	_____
14. Does the SOW state that the Registered Land Surveyor/Professional Land Surveyor should sign drawings that contain boundaries, legal descriptions, or parcel location information?	_____	_____	_____
15. Does the SOW prescribe the units to be used for recording and plotting location survey and mapping activities, as specified by the district or customer? (note: units of measure – 1 US survey foot = 0.3048006096 meters)	_____	_____	_____
16. Does the SOW require that location surveys be connected to existing local, state or national control monuments and reference d to an appropriately recognized installation, local state, or worldwide coordinate system as specified by the PDT?	_____	_____	_____
17. Does the SOW specify the minimum acceptable accuracy standards for positional data for project control markers (i.e., monuments, benchmarks)?	_____	_____	_____
18. Is densification of the existing project control markers required?	_____	_____	_____
19. If densification of existing project control markers is required, is this specified in the SOW?	_____	_____	_____
20. Does the SOW specify that at least two existing markers will be used as a baseline for the project geospatial coordinate reference system?	_____	_____	_____
21. Has the PDT specified acceptable limits of error in	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
terms of accuracy and precision based on the nature and purpose of each location surveying and mapping activity or product?			
22. Has the PDT developed site-specific standards for the format, transfer and storage of all location surveying and mapping data? (including digital data collector (raw) files)			
23. Does the SOW specify that Tri-Service CADD/GIS Technology Center SDSFIE standard will be used for all deliverables?			
24. Does the SOW specify additional site-specific standards developed by the PDT for the format, transfer, and storage of all geospatial data consistent with EM 1110-1-2909?			
25. Were the following factors considered by the PDT when developing site-specific standards:			
• Compatibility with selected GDS without modification or additional software?			
• Format of existing digital data and geospatial referenced mapping?			
• Usability by all parties of concern including stakeholders?			
26. Does the SOW prescribe the units to be used in recording and plotting geospatial data, as specified by the district or project sponsor? (note: transformation between datums and coordinate systems may be based on different programs (e.g., CORPSCON, Blue Marble, Geosoft) and small differences in the final coordinates may occur because of this.			
27. Does the SOW specify the minimum acceptable limits for accuracy and precision based on the nature			

	<u>Y</u>	<u>N</u>	<u>N/A</u>
and purpose of the GDS?			
28. Does the SOW require contractor QC of GDS activities and products, including independent tests that may be periodically reviewed by the government?			
29. Has the PDT established the level of production control and rigor with which quality assessments must be made consistent with the project-specific GDS requirements?			
30. Are the following deliverables specified in the SOW:			
• Unique items created and/or used to create the end products and the narrative and description required?			
• Digital data in the media as specified in the SOW along with all other supporting files?			
• Data manual as an ASCII file documenting all production and work files necessary for an outsider to recreate all products and determine the location, names, structures and associations of the data, such as layer description, file references (as appropriate), etc.?			
• Completed monument descriptions (as part of GIS/database or spreadsheet).			
• Unique items created and/or used to create the end products and the narrative and description required?			
• Required location, project and grid maps?			
• The negatives and three sets of prints of the aerial photographs taken for the project, if aerial photography is required in the SOW?			

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Two hard copies of each final map and two copies of the digital data delivered to the MM DC?			

Table B-2. Cost Estimate Preparation Checklist

Project Name: _____

Project Location: _____

MM DC Representative: _____

Preparer's Name and Title: _____

Date of Preparation: _____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>Prior to beginning work on cost estimate</u>			
1. Is the cost estimate being prepared for internal budgetary purposes (i.e., to obtain program funding)? If yes, a rough order of magnitude estimate may be prepared.	_____	_____	_____
2. Is the cost estimate being prepared for contract procurement (i.e., for use in contract negotiations)? If yes, a detailed cost estimate is required.	_____	_____	_____
3. Has the SOW been developed and approved?	_____	_____	_____
4. Have the phase of the project and the following items that will impact the project's cost been considered (this list is not all inclusive): Note: This checklist is only to be used to show whether items have been considered in the estimate, and not as a cost worksheet.			
• Size of areas of concern?	_____	_____	_____
• Site risk?	_____	_____	_____
• Type of MEC?	_____	_____	_____
• Soil type?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Topography?	_____	_____	_____
• Vegetation type?	_____	_____	_____
• MEC density?	_____	_____	_____
• Required removal depth?	_____	_____	_____
• Amount of munitions debris?	_____	_____	_____
• MC Sampling Analyses?	_____	_____	_____
• Special environmental and safety concerns (e.g., presence of CWM, requirements for engineering controls, sampling and analysis requirements such as air monitoring, etc.)?	_____	_____	_____
• Production rates?	_____	_____	_____
• In-house or contracted?	_____	_____	_____
• Percent of property to be investigated?	_____	_____	_____
• Surveying methods?	_____	_____	_____
• Data format requirements (i.e., digital or non-digital)?	_____	_____	_____
• PPE level required?	_____	_____	_____
• Type of operation to be performed (e.g., search only or search and recovery)?	_____	_____	_____
• Number and type of UXO technicians required?	_____	_____	_____
• Equipment and vehicles required (e.g., magnetometer, towed array, earth moving machinery, recovery vehicles)?	_____	_____	_____

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	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Expected time duration?			
• Access restrictions?			
• Political considerations?			
• Start date?			

Table B-3. Site Visit Review Checklist

Project Name: _____
 Project Location: _____
 MM DC Representative: _____
 Reviewer's Name and Title: _____
 Date of Review: _____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>General.</u>			
1. Will the initial site visit be a:			
• Government site visit?	_____	_____	_____
• Contractor site visit?	_____	_____	_____
• Combined government and contractor site visit?	_____	_____	_____
<u>Government Site Visit Attendees.</u>			
1. Are the following personnel attending the government site visit:			
• PM (optional)?	_____	_____	_____
• MM DC Representative(s) (optional)?	_____	_____	_____
• OE Safety Specialist?	_____	_____	_____
• Project Engineers (optional)?	_____	_____	_____
• Cost estimator (optional)?	_____	_____	_____
• Project Geophysicist (optional)?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
* Government geophysicist may bring along geophysical equipment to assess the capabilities of different instrumentation at the site.	_____	_____	_____
• Project Chemist (optional - applies primarily to sites with significant MC concerns)?	_____	_____	_____
<u>Contractor Site Visit Attendees.</u>			
1. Are the following personnel, at a minimum, attending the contractor site visit:			
• Contractor PM?	_____	_____	_____
• Contractor UXO Technician III?	_____	_____	_____
• Project Geophysicist (optional)?	_____	_____	_____
• PM (government) (optional*)?	_____	_____	_____
• MM DC Representative (optional*)?	_____	_____	_____
• OE Safety Specialist (optional*)?	_____	_____	_____
• Project Chemist (optional - applies primarily to sites with significant MC concerns)?	_____	_____	_____
* One PDT representative, at a minimum, is required to accompany the contractor during the site visit.			
2. Has the PM determined that the contractor is limited to a certain number of personnel to attend the site visit? (If yes, state maximum number allowable.)	_____	_____	_____
3. Has the PM confirmed that the contractor personnel are qualified IAW USACE Personnel/Work Standards?	_____	_____	_____

Site Visit Requirements. Prior to the site visit, the PDT should ensure that the following requirements are

	<u>Y</u>	<u>N</u>	<u>N/A</u>
fulfilled:			
• Have site-specific reports been reviewed?	_____	_____	_____
• Have any data gaps in the existing site data been identified?	_____	_____	_____
• Has the PM obtained rights of entry, if applicable?	_____	_____	_____
<u>ASSHP</u> . Has the PDT ensured that an ASSHP has been prepared and approved prior to the site visit?	_____	_____	_____

Table B-4. Work Plan Review Checklist

Project Name: _____
 Project Location: _____
 MM DC Representative: _____
 Reviewer's Name and Title: _____
 Date of Review: _____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>General</u>			
1. Have the following PDT members, at a minimum, reviewed the Work Plan:			
• PM?	_____	_____	_____
• MM DCDC?	_____	_____	_____
• Project engineers in relevant subject matter areas?	_____	_____	_____
• OE Safety Specialist?	_____	_____	_____
• Industrial Hygienist?	_____	_____	_____
• Cost Engineer?	_____	_____	_____
• Project Geophysicist?	_____	_____	_____
• Project Chemist?	_____	_____	_____
2. Is the Work Plan in compliance with the project SOW?	_____	_____	_____
3. Is the Work Plan in compliance with contract requirements?	_____	_____	_____

Work Plan Checklist

- The PDT will ensure that the Work Plan has been prepared IAW the SOW and contract specifications. The Work Plan will generally include the following chapters:
 - Project purpose and scope? _____
 - Work plan organization? _____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Project location?	_____	_____	_____
• Site description, including site location, topography, climate, vegetation, and site geology?	_____	_____	_____
• Site history?	_____	_____	_____
• Current and projected land use?	_____	_____	_____
• Summary of previous site investigations?	_____	_____	_____
• Fill Information for anticipated MEC?	_____	_____	_____
• Initial summary of MEC risk at the site?	_____	_____	_____
• Risk Assessment Subplan (for MC risk assessments conducted with RI/FSs)?	_____	_____	_____
2. Technical Management Plan. Are the following topics discussed in this chapter:			
• Project objectives?	_____	_____	_____
• Project organization?	_____	_____	_____
• Project personnel?	_____	_____	_____
• Project communication and reporting?	_____	_____	_____
• Deliverables?	_____	_____	_____
• Schedule?	_____	_____	_____
• Periodic Reporting?	_____	_____	_____
• Costing and billing?	_____	_____	_____
• Public relations support?	_____	_____	_____
• Subcontractor management procedures?	_____	_____	_____
• Field operation management procedures?	_____	_____	_____
• Data Management Procedures?	_____	_____	_____
• DQOs?	_____	_____	_____
3. Field Investigation Plan. Are the following topics discussed in this chapter:			
• Overall Approach?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Identification of Areas of Concern?	_____	_____	_____
• Location Surveys and Mapping Plan?	_____	_____	_____
• Geographic Information Systems (GIS) Plan?	_____	_____	_____
• Geophysical Prove-out Plan and Report?	_____	_____	_____
• Geophysical Investigation Plan?	_____	_____	_____
• Intrusive Investigation. Does this subchapter discuss the planning and implementation of the following:			
– General methodology?	_____	_____	_____
– MEC accountability and record management?	_____	_____	_____
– UXO personnel and qualifications?	_____	_____	_____
– MEC sampling locations?	_____	_____	_____
– MEC sampling procedures?	_____	_____	_____
– Munition with the Greatest Fragmentation Distance (MGFD)?	_____	_____	_____
– Minimum separation distances (MSDs)?	_____	_____	_____
– MEC identification?	_____	_____	_____
– MEC removal?	_____	_____	_____
– MEC storage?	_____	_____	_____
– MEC disposal procedures?	_____	_____	_____
– MEC disposal alternatives?	_____	_____	_____
• Investigation Derived Waste Plan?	_____	_____	_____
• Risk Characterization and Analysis?	_____	_____	_____
• Analysis of Land Use Controls?	_____	_____	_____
• Preparation of Recurring Review Plan?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
4. Quality Control Plan.			
• Does this chapter adequately discuss quality control procedures for the munitions response project?	_____	_____	_____
5. Explosives Management Plan.			
• Does this chapter describe how demolition explosives will be managed, planned and implemented during MEC operations?	_____	_____	_____
6. Explosives Siting Plan.			
• Does this chapter adequately describe the safety criteria for siting explosives operations at the site?	_____	_____	_____
7. Environmental Protection Plan.			
• Is a list of potential applicable or relevant and appropriate requirements (ARARs) provided?	_____	_____	_____
• Is an initial determination provided as to the actual applicability of these ARARs to the project?	_____	_____	_____
• Is the procedure by which ARARs will be identified and complied with during field investigation activities described?	_____	_____	_____
• Does the EPP note that evaluation of ARARs is an iterative process to be performed throughout the life of the project?	_____	_____	_____
• Does the EPP detail the identification and location of, as well as provide procedures and methods to protect and/or mitigate resources/sites of all known:			
– Endangered/threatened species within the project site?	_____	_____	_____
– Wetlands within the project site?	_____	_____	_____
– Cultural, archaeological, and water resources within the project site?	_____	_____	_____
– Coastal zones within the project site?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
– Trees and shrubs that will be removed within the project site?	_____	_____	_____
– Existing waste disposal sites within the project site?	_____	_____	_____
• Does the EPP include a description of the joint environmental survey conducted prior to the start of any on-site work by the contractor and CO/COR or other government personnel?	_____	_____	_____
• Does the EPP detail mitigation procedures for the following:			
– All manifesting, transportation, and disposal of wastes?	_____	_____	_____
– All burning activities?	_____	_____	_____
– Dust and emission control?	_____	_____	_____
– Spill control and prevention?	_____	_____	_____
– All storage areas and temporary facilities?	_____	_____	_____
– Access routes?	_____	_____	_____
– Trees and shrubs protection and restoration?	_____	_____	_____
– Control of water run-on and run-off?	_____	_____	_____
– Decontamination and disposal of equipment?	_____	_____	_____
– Minimization of areas of disturbance?	_____	_____	_____
• Does the EPP describe procedures for post-activity clean up to be accomplished?	_____	_____	_____
8. Property Management Plan.			
• Does this chapter detail procedures for the management of government property in accordance with FAR Part 45.5 and its supplements?	_____	_____	_____
9. Interim Holding Facility Siting Plan.			
• Does this chapter describe siting and security measures for the IHF?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
10. Physical Security Plan.			
• Does this chapter describe the areas of security interest related to the site?	_____	_____	_____
• Does this chapter specify the equipment, forces, and devices used to protect RCWM?	_____	_____	_____
11. References.			
• Does the Work Plan include appropriate references?	_____	_____	_____
12. Appendices. Are the following documents included as appendices to the Work Plan:			
• SOW?	_____	_____	_____
• Site maps?	_____	_____	_____
• Points of contact?	_____	_____	_____
• Site Safety and Health Plan?	_____	_____	_____
• Environmental Sampling and Analysis Plan? (Refer to Table B-7 and EM 200-1-3)	_____	_____	_____
• Forms?	_____	_____	_____
• MSD calculation sheets?	_____	_____	_____
• Resumes for key personnel and personnel filling core labor categories, EOD school graduation certificates if applicable?	_____	_____	_____
• Technical Project Planning Work Sheets?	_____	_____	_____

Table B-5. Geospatial Data Systems

Project Name: _____

Project Location: _____

MM DC Representative: _____

Preparer's Name and Title: _____

Date of Preparation: _____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
1. Locating of Existing Geospatial Data:			
• Types?	_____	_____	_____
• Accuracy?	_____	_____	_____
2. Newly Collected Geospatial Data:			
• Types?	_____	_____	_____
• Accuracy?	_____	_____	_____
• Location?	_____	_____	_____
3. Proposed System Methods and Procedures:			
• Hardware and Software?	_____	_____	_____
• Personnel?	_____	_____	_____
• Work Instructions/Data Format?	_____	_____	_____
• Data Processing?	_____	_____	_____
• Analysis Support?	_____	_____	_____
• Communication/Data Transfer?	_____	_____	_____
• Data Storage?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
4. Quality Control:			
• Data Validation?	_____	_____	_____
• Quality control should be provided by the surveying contractor if used.	_____	_____	_____
• If the contractor is conducting the surveying themselves, documented quality control metrics should be used. Examples of possible metrics include:			
- Specifying closure metrics on the survey			
- Specifying backsight tolerances on angular closure (i.e., 15 sec for distance less than 100-feet, 10 sec. for longer distances)	_____	_____	_____
5. Interim Deliverables?	_____	_____	_____
6. Final Deliverables?	_____	_____	_____
<u>Planning Considerations</u>			
1. Spatial Reference System:	_____	_____	_____
2. Existing Control Markers:			
• Density?	_____	_____	_____
• Accuracy?	_____	_____	_____
• Accessibility?	_____	_____	_____
3. Project and Grid Controls (New):			
• Requirements?	_____	_____	_____
• Material?	_____	_____	_____
• Location?	_____	_____	_____
• Construction?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Identification?	_____	_____	_____
• Accuracy?	_____	_____	_____
4. Proposed Methods and Procedures:			
• Equipment?	_____	_____	_____
• Personnel?	_____	_____	_____
• Safety?	_____	_____	_____
• Work Instruction?	_____	_____	_____
• Data Processing?	_____	_____	_____
• Production Rates?	_____	_____	_____
5. QC:			
• Instrument Calibration?	_____	_____	_____
• Data Validation?	_____	_____	_____
6. Interim Reporting?	_____	_____	_____
<u>Electronic Submittal</u>			
1. Are disks readable?	_____	_____	_____
2. Are the disks labeled and dated?	_____	_____	_____
3. Are the files in the correct format, as requested in SOW? (e.g., DOS, Win 95/98/NT, UNIX, etc.)	_____	_____	_____
4. Do they follow the SDSFIE, if required?	_____	_____	_____
5. Are all of the detailed files included on the disks to make a complete data set?	_____	_____	_____
6. Is each individual file readable and useable?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
7. Is the file located electronically (geospatially) at the correct location on the ground?	_____	_____	_____
8. Is the coordinate system correct?	_____	_____	_____
9. Are all files geographically located in the correct plane and datum?	_____	_____	_____
10. Are the X, Y, and Z coordinates correct within the file?	_____	_____	_____
11. Have the correct number of copies been submitted, depending on the submittal stage?	_____	_____	_____
<u>Paper or Hard Copy Submittal</u>			
1. Is the sheet the requested size?	_____	_____	_____
2. Does it contain a standard border?	_____	_____	_____
3. Is the correct grid system and associated control shown on the sheet?	_____	_____	_____
4. Has the title block been completed (i.e., all required blocks filled in)?	_____	_____	_____
5. Is the sheet plotted at the scale shown in the title block?	_____	_____	_____
6. Are there grid marks or tics (meters, feet, both, Lat/Lon, Local, etc.)?	_____	_____	_____
7. Is there a North arrow (magnetic declination, true North, and grid North) and graphical scale shown on the sheet, both graphically and printed text?	_____	_____	_____
8. Is there a legend for associated symbols on the sheet? Or, are all symbols used in a project shown on one legends and notes page?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
9. If the drawing is to be certified or stamped, are the correct seals, stamps, and signatures contained on the sheet and legible?	_____	_____	_____
10. Is the state registration seal and associated state registration number shown on the sheet?	_____	_____	_____
11. Are all the sheets plotted and an index sheet prepared to make a complete set of drawings to convey a completed mapping product?	_____	_____	_____
12. Are all sheets numbered in a sequential order in the set?	_____	_____	_____
13. Are all sheets included in the set?	_____	_____	_____
14. Have the correct number of copies been submitted?	_____	_____	_____
15. Are boundaries of required removal or remediation areas shown?	_____	_____	_____
16. Are grids of areas investigated shown?	_____	_____	_____
17. Are the coordinates of grid corners shown on drawing or in a table?	_____	_____	_____
18. Was the GIS submittal required? If so:	_____	_____	_____
• Are all required databases and map layers submitted?	_____	_____	_____
• Is the data submitted in the agreed-upon format (ArcView, Intergraph Modular GIS Environment [MGE], MapInfo, etc.)?	_____	_____	_____
• Is the Users Manual modified for any project specific requirements or software modification from the standard?	_____	_____	_____

Table B-6. Geophysical Investigations Checklist

Project Name: _____
 Project Location: _____
 MM DC Representative: _____
 Preparer's Name and Title: _____
 Date of Preparation: _____

Y N N/A

Geophysical Planning Considerations:

1. Is the geophysical planning being performed by or under the supervision of a "qualified" geophysicist?

2. Have objectives been considered for the geophysical investigation in the following areas:

- Analog Geophysical surveying (Mag and Dig)?
- Digital Geophysical mapping?
- Geophysical interrogation?

3. Has the geophysical investigation planning process been addressed:

- Experienced personnel?
- Geophysical systems?
- Analysis procedures?
- Navigational accuracy and precision?

Geophysical Instrument Considerations:

1. Were the following factors which affect geophysical systems been considered:

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Military munition composition?	_____	_____	_____
• Military munition size?	_____	_____	_____
• MEC depth?	_____	_____	_____
• Military munition fuzing?	_____	_____	_____
• Background interference from metallic scrap?	_____	_____	_____
• Soil composition and geology?	_____	_____	_____
• Vegetation and terrain?	_____	_____	_____
• Cultural features?	_____	_____	_____
<u>Selection of Geophysical Systems</u>			
1. Which type of geophysical instrument is most appropriate:			
• Active (TDEM or FDEM)?	_____	_____	_____
• Passive (magnetometer or gradiometer)?	_____	_____	_____
<u>MEC Detection Capabilities</u>			
1. Have the following factors been considered in determining the detection capabilities in the field for a geophysical instrument?			
• Vegetation?	_____	_____	_____
• Terrain?	_____	_____	_____
• Geologic noise/gradients?	_____	_____	_____
• Cultural noise?	_____	_____	_____
• Munitions debris?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• MEC penetration beyond detection?	_____	_____	_____
• QA items detected?	_____	_____	_____
<u>MEC Detection Depths</u>			
1. Have maximum MEC detection depths been estimated in accordance with Table 6.1?	_____	_____	_____
2. Has the maximum possible depth of MEC at the site been estimated?	_____	_____	_____
<u>Geophysical Systems and Electric Fuze Safety</u>			
Have the following safety precautions been applied to the project?			
1. Passive Systems:	_____	_____	_____
• Are the passive systems being used in accordance with the manufacturer's instructions?	_____	_____	_____
2. Active Systems:	_____	_____	_____
• Prior to using an active instrument, has the operator determined if any fuzing systems exist at the sites that contain any electrical components?	_____	_____	_____
• If a MEC site does not contain electrical fuzes, are the active systems being used IAW the manufacturer's instruction?	_____	_____	_____
• Has the latest version of the Active EMI Effect on Electronic Fuzes been reviewed to determine the expected effect of the instrumentation on fuzes suspected to be on-site?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<ul style="list-style-type: none"> If a MEC site does contain or is reasonably expected to contain electrical fuzes, has the instrument operator submitted a request for a waiver from the Design Center Safety Manager? 	_____	_____	_____
<u>Analysis Software</u>			
1. Has the appropriate analysis software been selected for the specific instrument?	_____	_____	_____
2. Prior to using the software, have navigation adjustments been made?	_____	_____	_____
3. Are the data in the correct, project-specific coordinate system?	_____	_____	_____
4. Are the geophysical data in the units specified by the software's instruction manual?	_____	_____	_____
<u>Navigation System</u>			
1. Which type of coordinate system was selected:			
<ul style="list-style-type: none"> Temporary (local coordinate system)? 	_____	_____	_____
<ul style="list-style-type: none"> Permanent (UTM or State Plane)? 	_____	_____	_____
2. What type of positional system was used?			
<ul style="list-style-type: none"> Line and Fiducial 	_____	_____	_____
<ul style="list-style-type: none"> DGPS 	_____	_____	_____
<ul style="list-style-type: none"> Laser Based RTS 	_____	_____	_____
<ul style="list-style-type: none"> Ultrasonic 	_____	_____	_____
<ul style="list-style-type: none"> RF 	_____	_____	_____
<ul style="list-style-type: none"> Other 	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
3. Are there sufficient horizontal and vertical control points and/or bench marks at the project site?			
▪ Are the accuracies of the control point/bench mark coordinates sufficient for the needs of the selected positioning system?			
▪ Are the coordinates of the control points/bench marks available in the project-specific coordinate system?			
▪ Have the limitations (or assumptions) of the selected positioning system(s) been considered and evaluated against their intended use?			
<u>GPO Planning</u>			
1. Have DQOs been developed?			
2. Has a Work Plan been developed for the prove-out?			
3. Does the GPO Work Plan describe the following:			
• GPO grid location and construction?			
• Factors influencing prove-out grid location and construction:			
– Terrain, vegetation, geological conditions?			
– Proximity to the field site?			
– Isolation from overhead power lines, radio transmitters, underground utilities, etc?			
▪ The establishment of project specific QC measures and metrics for selected detection and navigation instruments as well as processing and interpretation methods?			

	<u>Y</u>	<u>N</u>	<u>N/A</u>
– Convenient access?	_____	_____	_____
– Likelihood that the area will be disturbed during use?	_____	_____	_____
– Rights-of-Entry?	_____	_____	_____
– Possibility of pre-existing buried MEC?	_____	_____	_____
• Pre-Seeding geophysical mapping?	_____	_____	_____
• Have the following items been considered regarding pre-seeding:			
– Size and configuration?	_____	_____	_____
– Survey accuracy?	_____	_____	_____
– Layout?	_____	_____	_____
– Seeded items?	_____	_____	_____
– Depths and orientations?	_____	_____	_____
– Cultural interference?	_____	_____	_____
– Munitions debris interference?	_____	_____	_____
• Data collection variables, including:			
– Instrument height?	_____	_____	_____
– Instrument orientation?	_____	_____	_____
– Direction of travel?	_____	_____	_____
– Measurement interval?	_____	_____	_____
– Lane width?	_____	_____	_____
• Data analysis and interpretation?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Data evaluation?	_____	_____	_____
• Selection of detection systems?	_____	_____	_____
• Establish project specific QC measures and/or metrics for the selected detection instruments?	_____	_____	_____

Geophysical Investigation Plan

1. Does the Geophysical Investigation Work Plan address the following:

• Site Description:			
– Geophysical DQO measures and metrics as well as their frequencies and reporting requirements?	_____	_____	_____
– Specific Area(s) to be investigated, including a Survey Mission Plan Map?	_____	_____	_____
– Past, current and future use?	_____	_____	_____
– Anticipated MEC type, composition and quantity?	_____	_____	_____
– Depth anticipated?	_____	_____	_____
– Digital Topographic Maps?	_____	_____	_____
– Vegetation?	_____	_____	_____
– Geologic conditions (including bedrock type, mineralization and depth)?	_____	_____	_____
– Soil conditions (including soil type/composition, typical moisture content, and thickness)?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
– Surface water conditions (does area to be surveyed include ponds, lakes, streams or shallow water coastlines?)	_____	_____	_____
– Man-made features potentially affecting geophysical investigations?	_____	_____	_____
– Site-specific dynamic events such as tides, unusually strong winds, or other unusual factors affecting site operations?	_____	_____	_____
– Overall Site Accessibility and Impediments?	_____	_____	_____
– Potential Worker Hazards?	_____	_____	_____
• Geophysical Investigation Methods:			
– Survey Type?	_____	_____	_____
– Equipment?	_____	_____	_____
– Procedures?	_____	_____	_____
– Personnel?	_____	_____	_____
– Production Rates?	_____	_____	_____
– Data Spatial Density?	_____	_____	_____
• Instrument Standardization:			
– Instrument drift?	_____	_____	_____
– Standardization procedures?	_____	_____	_____
– Abbreviated standardization checks?	_____	_____	_____
– Instrument response to a known standard?	_____	_____	_____
• Data Processing, Correction and Analysis:			

	<u>Y</u>	<u>N</u>	<u>N/A</u>
– Instrument drift correction?	_____	_____	_____
– Diurnal drift correction?	_____	_____	_____
– Digital filtering and enhancement?	_____	_____	_____
– Anomaly selection process?	_____	_____	_____
– Correlation with ground truth?	_____	_____	_____
• Dig Sheet Development?	_____	_____	_____
• Anomaly Reacquisition?	_____	_____	_____
• Feedback Process?	_____	_____	_____
• Quality Control?	_____	_____	_____
• Corrective Measures?	_____	_____	_____
• Records Management?	_____	_____	_____
• Interim Reporting?	_____	_____	_____
• Map Format?	_____	_____	_____

Sectorization

1. When defining sectors, were the following factors considered?

• Former military use?	_____	_____	_____
• Anticipated MEC type?	_____	_____	_____
• Anticipated MEC distribution?	_____	_____	_____
• Terrain and vegetation?	_____	_____	_____
• Current land use?		_____	

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Natural and cultural boundaries?	_____	_____	_____
_____	_____	_____	_____
<u>Surveying within a Sector</u>			
1. Which surveying methodology is appropriate for the sector:			
• 100 percent surveying?	_____	_____	_____
• Biased surveying?(Increased data density in areas of interest)	_____	_____	_____
• Probability surveying?	_____	_____	_____
• If probability surveying is selected, which type of strategy will be used in the sector:			
– Random pattern grid surveying?	_____	_____	_____
– Hybrid surveying?	_____	_____	_____
– Transect surveying?	_____	_____	_____
– Meandering path surveying?	_____	_____	_____
<u>Geophysical Data Acquisition</u>			
1. Are SOPs provided for all processes and procedures associated with the geophysical data acquisition program?			
_____	_____	_____	_____
<u>Excavating Anomalies within a Grid</u>			
1. Which methodology for selecting anomalies for excavation is appropriate for the grid?			
• 100 percent anomaly excavation?	_____	_____	_____
• Statistical anomaly excavation?	_____	_____	_____
• 100% having predefined anomaly characteristics with statistical sampling of all others.	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>Data Interpretation</u>			
1. Was the geophysical data interpreted after the geophysical investigation?	_____	_____	_____
2. Were the project objectives met?	_____	_____	_____
<u>Geophysical Anomaly Dig Sheets</u>			
1. Are standard operating procedures (SOPs) provided for all processes and procedures associated with the geophysical mapping program?	_____	_____	_____
2. Are the frequencies and reporting needs of the quality control measures included in the geophysical mapping plan?	_____	_____	_____
3. Do the dig sheets contain the following information:			
• Project site?	_____	_____	_____
• Grid number?	_____	_____	_____
• Anomaly number?	_____	_____	_____
• Name of the geophysical contractor?	_____	_____	_____
• Name of the responsible field geophysicist?	_____	_____	_____
• Date geophysical mapping occurred?	_____	_____	_____
• Name of the responsible analyst?	_____	_____	_____
• Date the data was geophysically analyzed?	_____	_____	_____
• Predicted location coordinates?	_____	_____	_____
• Predicted depth to top of item (optional)?	_____	_____	_____
• Comments.	_____	_____	_____

Y N N/A

Anomaly Reacquisition and Marking

1. Was the same type of instrument used for reacquisition as that used in the geophysical survey? (Does the instrument used in reacquisition measure the same property (magnetic field or conductivity) as the original instrument? No contacts should still be investigated using the original instrument. If a similar, but not the same instrument is used in reacquisition, a method for checking anomaly amplitudes between the two similar instruments must be developed and documented.
2. Were discrepancies between the re-acquired locations of anomalies as shown on the dig-sheet and final excavated location recorded and included in the geophysical report?
3. Were discrepancies between the anomaly amplitudes recorded on the digsheet and the anomaly amplitudes recorded during the reacquisition resolved and recorded on the digsheet?

_____	_____	_____
_____	_____	_____
_____	_____	_____

Anomaly Excavation

1. Was the following post-excavation information collected?
 - Project site?
 - Grid number?
 - Anomaly number?
 - Excavation contractor?
 - Name of the responsible OE Safety Specialist?
 - Date of excavation?
 - Final excavated location coordinates?
 - Weather conditions?

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Anomaly identification?	_____	_____	_____
• Actual depth to top of item?	_____	_____	_____
• Soil type?	_____	_____	_____
• Actual length (optional)?	_____	_____	_____
• Actual diameter (optional)?	_____	_____	_____
• Actual azimuth (optional)?	_____	_____	_____
• Item material composition (optional)?	_____	_____	_____
• Comments.	_____	_____	_____
<u>Digital Data Format and Storage</u>			
1. Were the requirements and standards for a digital data management system tailored for the specific ordnance investigative needs of the project?	_____	_____	_____
2. Has the geophysical data been stored in a format and media that permits loading, storage and use of GIS workstations without modification or additional software?	_____	_____	_____
<u>Quality Management</u>			
1. Were all of the quality control measures and metrics met?	_____	_____	_____
• If not all measures and metrics were met, for those that failed, were root-cause analyses performed and corrective actions taken?	_____	_____	_____
2. Were procedures for product quality management followed for:			
• Delivering a completed, cleared Grid?	_____	_____	_____
• Producing a completed investigation report?	_____	_____	_____

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	<u>Y</u>	<u>N</u>	<u>N/A</u>
• Producing a completed GPO report with the specified as-built details?	<hr/>	<hr/>	<hr/>
• Delivering completed dig sheets?	<hr/>	<hr/>	<hr/>
• Delivering properly formatted and documented raw and final geophysical data?	<hr/>	<hr/>	<hr/>
• Including complete and legible maps of the data and interpretations	<hr/>	<hr/>	<hr/>

Table B-7. Munitions Constituents Sampling Checklist

Project Name: _____
 Project Location: _____
 MM DC Representative: _____
 Preparer's Name and Title: _____
 Date of Preparation: _____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>Objective</u>			
Has the objective for the munitions response investigation been identified?	_____	_____	_____
<u>Initial MC Investigation Planning</u>			
Has the MC investigation system employed the following components:			
• Experienced personnel?	_____	_____	_____
• Experienced laboratory (e.g., NELAP accreditation and DoD QSM compliance self-declaration)?	_____	_____	_____
• Navigational accuracy and precision?	_____	_____	_____
<u>Sampling and Analysis Considerations</u>			
Have the following factors been considered for sampling and analysis:			
• MEC depth?	_____	_____	_____
• MEC composition?	_____	_____	_____
• Background conditions?	_____	_____	_____
• Regulatory requirements?	_____	_____	_____
<u>Sampling and Analysis Plan</u>			
1. Has the SAP been prepared prior to initiating field activities?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
2. Has the SAP been prepared IAW ER 1110-1-263, and EM 200-1-3?	_____	_____	_____
3. Are the Laboratory QA/QC plan and applicable Standard Operating Procedures included in the SAP?	_____	_____	_____
4. Has the SAP submitted to PM and MM DC been approved?	_____	_____	_____
<u>Data Interpretation, Validation, Reporting, and Decision Making</u>			
Have the requirements outlined in Section 7-8 been met?	_____	_____	_____
<u>Quality Management</u>			
1. Has the QC of the various analytical tasks been provided?	_____	_____	_____
2. Have the handling and custody requirements for all QC samples been administered?	_____	_____	_____
<u>Electronic Data Deliverables</u>			
1. Has EDD been specified in SOW?	_____	_____	_____
2. Is implementation included in the Work Plan?	_____	_____	_____
3. If ADR (or similar EDD) specified, does Work Plan address automated portions of data review?	_____	_____	_____

Table B-8. Blast and Fragmentation Protection Review Checklist

Project Name: _____
 Project Location: _____
 MM DC Representative: _____
 Reviewer's Name and Title: _____
 Date of Review: _____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>Engineering Considerations for SOW Preparation</u>			
1. Has the SOW properly taken into account the physical characteristics of the site?	_____	_____	_____
2. Has the SOW taken into account the type of munitions response being contemplated?	_____	_____	_____
3. Has the SOW taken into account the characteristics of the probable MEC items that will be encountered at the site?	_____	_____	_____
4. Has the correct MGFD been identified for the site?	_____	_____	_____
<u>Minimum Separation Distances</u>			
1. Are there MSDs being proposed for the site?	_____	_____	_____
2. Have the following criteria for an unintentional detonation been evaluated:			
• MSD for unintentional detonations: Which will provide the greatest distance?	_____	_____	_____
– Overpressure at a K value of 50?	_____	_____	_____
– Maximum fragmentation distance?	_____	_____	_____
– 200 feet?	_____	_____	_____
• Team Separation Distance: Which will provide the greatest distance?			
– Overpressure at a K value of 50?	_____	_____	_____
– 1/600 distance?	_____	_____	_____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<ul style="list-style-type: none"> If the 1/600 distance is being used: <ul style="list-style-type: none"> Has justification been provided? Has approval been given by the MM CXCX? 			
3. Have the following criteria for an intentional detonation been evaluated:			
<ul style="list-style-type: none"> MSD: Which will provide the greatest distance? <ul style="list-style-type: none"> Maximum fragmentation distance? Overpressure at a K value of 328? 200 feet? 			
<u>Explosives Siting Plan Review Considerations</u>			
1. Has a map been included with the Explosives Siting Plan and is it at an appropriate scale?			
2. Does the map identify the MRSs, the location for the explosives storage magazine, and any planned or established demolition areas?			
3. Has the MRS been properly identified and has an appropriate MSD been calculated for the area?			
4. Have the Q-D arcs for the MRS been drawn from the outermost edge of each area?			
5. Has the proposed explosives storage magazine been properly sited?			
6. Has the proposed demolition area been properly sited?			
7. Have footprint areas for any Blow-in-Place areas, Collection Points, or In-Grid Consolidated Shots been discussed in the Explosives Safety Plan?			
8. Has an appropriate team separation distance been identified between intrusive investigation teams in the Explosives Safety Plan?			
9. Have any engineering controls been proposed in the Explosives Safety Plan?			
10. Does the CDC have a DDESB-approved siting plan for the site, if a CDC is to be used?			

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>Engineering Controls for Unintentional/Accidental Detonations</u>			
Barricades. The PDT will consider the following elements regarding barricade selection:			
• Have barricades been specified for the project?	_____	_____	_____
• Has the correct barricade been specified for the application IAW the DOD standards?	_____	_____	_____
• If the proposed barricade has not been previously approved, has a complete structural design package been submitted to the MM CXCX?	_____	_____	_____
• Has the design package been forwarded through appropriate channels to DDESB for review?	_____	_____	_____
<u>Engineering Controls for Intentional Detonations</u>			
1. Is soil being proposed as an engineering control for an intentional detonation?	_____	_____	_____
2. Has the amount of soil to be placed on top of the MEC been properly calculated?	_____	_____	_____
3. Are sandbags being proposed as an engineering control to limit the fragmentation and overpressure from an intentional MEC detonation?	_____	_____	_____
4. Has the amount of sandbags being proposed been properly calculated based on the type of MEC to be destroyed?	_____	_____	_____
5. Is a water barrier being proposed as an engineering control for an intentional detonation?	_____	_____	_____
6. Have the requirements for water barricades detailed in HNC-ED-CS-S-00-3 been followed?	_____	_____	_____
7. Has a CDC been specified for use on the site?	_____	_____	_____
8. Is the CDC capable of safely containing the blast and fragmentation effects of the MEC to be found at the site?	_____	_____	_____

Table B-9. Munitions Constituents Sampling Checklist

Project Name: _____
 Project Location: _____
 MM DC Representative: _____
 Preparer's Name and Title: _____
 Date of Preparation: _____

	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>Objective</u>			
Has the objective for the munitions response investigation been identified?	_____	_____	_____
<u>Initial MC Investigation Planning</u>			
Has the MC investigation system employed the following components:			
• Experienced personnel?	_____	_____	_____
• Experienced laboratory?	_____	_____	_____
• Navigational accuracy and precision?	_____	_____	_____
<u>Sampling and Analysis Considerations</u>			
Have the following factors been considered for sampling and analysis:			
• MEC depth?	_____	_____	_____
• MEC composition?	_____	_____	_____
• Background conditions?	_____	_____	_____
• Regulatory requirements?	_____	_____	_____
	<u>Y</u>	<u>N</u>	<u>N/A</u>
<u>Sampling and Analysis Plan</u>			
1. Has the SAP been prepared prior to initiating field activities?	_____	_____	_____
2. Has the SAP been prepared IAW ER 1110-1-263, ER 200-3-1, and EM 200-1-3?	_____	_____	_____
3. Are the Laboratory QA/QC plan and applicable Standard Operating Procedures included in the SAP?	_____	_____	_____
4. Has the SAP submitted to PM and MM DC been approved?	_____	_____	_____

Data Interpretation, Validation, Reporting, and Decision Making

Have the requirements outlined in Section 7.8 been met?

Quality Management

1. Has the QC of the various analytical tasks been provided?
2. Have the handling and custody requirements for all QC samples been administered?

Electronic Data Deliverables

1. Has EDD been specified in SOW/PWS?
2. Is implementation included in the Work Plan?
3. If SEDD (or similar EDD) specified, does Work Plan address automated portions of data review?

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